

ABSTRACT OF THE DISCLOSURE

A Soft, Prioritised Early Packet Discard System is provided, which is suitable for satellite onboard switching and very-high-speed terrestrial switching applications. The system counts the number of newly arriving packets, calculates and regularly updates an average queue size, which is used in setting a packet-count threshold via a descending staircase function. When the number of newly arriving packets reaches the packet-count threshold and when the average queue size reaches or exceeds the congestion threshold; a packet is discarded and the packet-counter is reset to zero. The counting of packets is halted while the average queue size remains below the congestion threshold. The regular dropping of packets allows simplified hardware implementations. In calculating the average queue size, a progressively higher exponential queue-length averaging parameter is used for higher instantaneous queue length, to provide faster reaction to congestion situations. The averaging parameters and packet-count thresholds are implemented using lookup tables. A priority-based method is incorporated to better match the Quality of Service requirements associated with a service class.